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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,131	10/28/2003	Kang-Bok Lee	3364P100	5527

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EXAMINER	
AGA, SORI A	

ART UNIT	PAPER NUMBER
2419	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/696,131	LEE ET AL.	
	Examiner	Art Unit	
	SORI A. AGA	2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4,6-9,11 and 12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,6-9,11 and 12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *03/17/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's amendment and accompanying remarks mailed 03/16/2009 has been entered and carefully considered. Claims 1 and 8 are amended, claims 3, 5 and 10 are cancelled. Claims 1, 2, 4, 6-9 and 11-12 are pending.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1,4,6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mayweather et al. (US 2003/0031126 A1) and Kao et al. (US 7,212,490) (herein after Kao).

Regarding claim 1, Mayweather teaches a ring selection method for node-to-node packet transmission in a dual ring network including a plurality of transmission nodes and reception nodes **[see Abstract and figures 3 and 4]**, said method comprising: (a) transmitting a reception node address request message for packet transmission to all the nodes, and updating a routing table using information on a short path transferred from the reception node **[see paragraph 0012 lines 1-9 and paragraph 0013 lines 1-10 where each node maintains a table and uses the table to route its packets based on the shortest path which is a minimum number of hops and where the table is updated using information from broadcast packets]**;

(b) using information on inter-node hop numbers included in the routing table to select a ring having the lowest hop number between the reception nodes **[see paragraph 0012 liens 1-9 where lowest cost path selected is the path with the minimum number of hops to the destination node];**

(c) determining whether or not the selected ring is wrapped, selecting the other ring when the selected ring is wrapped **[see paragraph 0054 lines 1-8 where traffic is routed to the opposite ring if a link fault is detected and the link is wrapped]** and if the selected ring is not wrapped, comparing its usage rate and hop number with reference values based on a ring selection algorithm **[see paragraph 0080 where a computation of cost (reference value based on ring selection algorithm) is used to determine a preferred ring for transmission and where the cost includes considering the number of hops (hop number). See also paragraph 0058 and 0059 where an algorithm is used to account for provision of bandwidth on the ring including calculating the amount of traffic that is allowed on a link (usage rate)]**, wherein said usage rate is an allowable transmission rate per node according to a fairness algorithm **[See paragraph 0058 and 0059 where an algorithm is used to account for provision of bandwidth on the ring including calculating the amount of traffic that is allowed on a link (usage rate)]**, said ring selection algorithm

i) calculating a transmission coefficient using the hop number based on a path between the reception nodes, and the inter-node usage rate **[see paragraph 0080 where a computation of cost (transmission coefficient) is used to determine a preferred ring for transmission and where the cost includes considering the number of hops (hop**

number). See also paragraph 0058 and 0059 where an algorithm is used to account for provision of bandwidth on the ring including calculating the amount of traffic that is allowed on a link (inter node-usage rate)]

(ii) storing the calculated transmission coefficient in the routing table **[see paragraph 0080 lines 1-3 where the cost is entered in a table maintained at each node- see also table 1 of page 6]**

(iii) selecting a ring having the lowest transmission coefficient stored in the routing table as the reference value **[see paragraph 0082 lines 1-2 where the direction with the lower cost is preferred (selected)]**; and

(d) if the selected ring resulting from said using and said determining is suitable for packet transmission, using the selected ring for packet transmission **[see paragraph 0080 lines 16-19 where the links being considered are operational (suitable for packet transmission)]**.

Wherein, the transmission coefficient is determined with reference to the hop number between the transmission node and the reception node, the usage rate of each node **[see paragraph 0080 where a computation of cost (transmission coefficient) is used to determine a preferred ring for transmission and where the cost includes considering the number of hops (hop number). See also paragraph 0058 and 0059 where an algorithm is used to account for provision of bandwidth on the ring including calculating the amount of traffic that is allowed on a link (inter node-usage rate)]**,

However, Mayweather does not explicitly teach the transmission coefficient is determined using inter-node delay time.

However, Kao in the same field of endeavor teaches using a latency metric (delay time) for a given node for each ring to determine a preferred path **[see Column 9 lines 46-52 and column 3 lines 12-13]**. Therefore, It would have been obvious at the time of the invention to include latency (delay time) in the cost computation of Mayweather in order to meet quality of service guarantees (column 2 lines 22-27).

Regarding claim 4, Mayweather in view of Kao teaches the method as claimed in claim 1, where the comparing with the reference values in (c) comprises: determining whether or not the selected ring from said using and the ring selected by the ring selection algorithm have the same reference values **[see paragraph 0082 where in the event that the costs to each node on direction 0 and 1 are equal (have the same reference values) either direction is selected]**.

Regarding claim 6, Mayweather in view of Kao teaches the ring selection method as claimed in claim 1, wherein the usage rate and the transmission coefficient are calculated in a predetermined cycle, and updated in the routing table **[see paragraph 0165 lines 1-7 where each of the nodes constantly or periodically (in a predetermined cycle) counts errors and see paragraph 0167 lines 1-7 and paragraph 0172 lines 1-5 where the detection of fault triggers an update of the routing tables].**

Regarding claim 7, Mayweather in view of Kao teaches the ring selection method as claimed in claim 1 further comprising selecting the other ring when the selected ring is wrapped **[see paragraph 0054 lines 1-8 where traffic is routed to the opposite ring if a link fault is detected and the link is wrapped].**

3. Claims 2, 8, 9, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mayweather and Kao as applied to claims 1,4,6 and 7 above, and further in view of Cisco IOS release (herein after Cisco).

Regarding claim 2, Mayweather in view of Kao teaches the ring selection method as claimed in claim 1. However, Mayweather does not teach claim 1 wherein in (a), each of the transmission and reception nodes have a topology map including information on inter-node hop numbers, port information, MAC address, and wrapped-or-not information. However, Kao in the same field of endeavor teaches hop count is included in each topology table of each node **[see column 10 line 22-29].** Kao also teaches shortest path determination is made based on this table **[see column 9 line 47]**. Therefore, it would have been obvious at the time of the invention to determine hop count and said usage rate based on data stored in a routing table in each node in order to have quick access to the information needed to make said ring selection.

However, Cisco in the same field of endeavor teaches maintaining a topology map of the ring at every node including, MAC addresses, hop counts and wrapped or not information

[pages 5 and 6]. Therefore, it would have been obvious at the time of the invention to make Mayweather's table include information on MAC address, wrapped or not information and inter-node hop numbers in order to make information available for the system in making the ring selection process and making routing decisions.

Regarding claim 8, Mayweather teaches a method for selecting a ring for transmitting packets in a dual ring network comprising: if neither ring is wrapped: (a) calculating a transmission coefficient for each ring based on for each node in each ring, a hop number and usage rate **[see paragraph 0080 where a computation of cost (transmission coefficient) is used to determine a preferred ring for transmission and where the cost includes considering the number of hops (hop number). See also paragraph 0058 and 0059 where an algorithm is used to account for provision of bandwidth on the ring including calculating the amount of traffic that is allowed on a link (usage rate)]**, wherein said usage rate is an allowable transmission rate per node according to a fairness algorithm **[See paragraph 0058 and 0059 where an algorithm is used to account for provision of bandwidth on the ring including calculating the amount of traffic that is allowed on a link (usage rate)];**

(b) selecting the ring with the lowest calculated transmission coefficient for transmitting packets value **[see paragraph 0082 lines 1-2 where the direction with the lower cost is preferred (selected)]**.

However, Mayweather does not teach claim 1 wherein in (a), each of the transmission and reception nodes have a topology map including information on inter-node hop

numbers, port information, MAC address, and wrapped-or-not information. However, Kao in the same field of endeavor teaches hop count is included in each topology table of each node **[see column 10 line 22-29].** Kao also teaches shortest path determination is made based on this table **[see column 9 line 47]**. Therefore, it would have been obvious at the time of the invention to determine hop count and said usage rate based on data stored in a routing table in each node in order to have quick access to the information needed to make said ring selection.

However, Cisco in the same field of endeavor teaches maintaining a topology map of the ring at every node including, MAC addresses, hop counts and wrapped or not information [pages 5 and 6]. Therefore, it would have been obvious at the time of the invention to make Mayweather's table include information on MAC address, wrapped or not information and inter-node hop numbers in order to make information available for the system in making the ring selection process and making routing decisions.

However, Mayweather does not explicitly teach the transmission coefficient is determined using delay time.

However, Kao in the same field of endeavor teaches using a latency metric (delay time) for a given node for each ring to determine a preferred path **[see Column 9 lines 46-52 and column 3 lines 12-13]**. Therefore, It would have been obvious at the time of the invention to include latency (delay time) in the cost computation of Mayweather in order to meet quality of service guarantees (column 2 lines 22-27).

Regarding claim 9, Mayweather teaches the method defined by claim 8 wherein said hop number and said usage rate are determined with reference to values in a routing table **[see paragraph 0080 where a computation of cost (transmission coefficient) is used to determine a preferred ring for transmission and where the cost includes considering the number of hops (hop number)]**.

Regarding claim 11, Mayweather teaches the method defined by claim 8, wherein said selecting comprises: calculating a transmission coefficient for each of the nodes **[see paragraph 0080 where a computation of cost (transmission coefficient) is used to determine a preferred ring for transmission and where the cost includes considering the number of hops];** storing the calculated transmission coefficient in the routing table **[see paragraph 0080 lines 1-3 where the cost is entered in a table maintained at each node- see also table 1 of page 6]; and** selecting a ring having the lowest transmission coefficient stored in the routing table as the reference value **[see paragraph 0082 lines 1-2 where the direction with the lower cost is preferred (selected)]**.

Regarding claim 12, Mayweather in view of Kao teaches the ring selection method as claimed in claim 8, wherein the usage rate and the transmission coefficient are calculated in a predetermined cycle, and updated in the routing table **[see paragraph 0165 lines 1-7 where each of the nodes constantly or periodically (in a predetermined cycle) counts errors and see paragraph 0167 lines 1-7 and paragraph 0172 lines 1-5 where the detection of fault triggers an update of the routing tables].**

Response to Arguments

4. Applicant's arguments with respect to claims 1,2 and 4,6-9 and 11-12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 03/17/2009 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SORI A. AGA whose telephone number is (571)270-1868. The examiner can normally be reached on M-F 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on (571)272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. A. A./
Examiner, Art Unit 2419

/Ayaz R. Sheikh/
Supervisory Patent Examiner, Art Unit 2419